SECTION I. (AMENDMENTS TO THE SPECIFICATION)

1. On page 7, the first full paragraph has been replaced by the following new paragraph:

It is a primary object of the present invention to provide a method and apparatus for performing epitaxial single crystal deposition of silicon carbon layers in a batch process. Such a single crystal silicon carbon layer has sufficiently high C concentration, so that an interface defined by this single crystal silicon carbon layer and an underlying substrate, which may contain an upper surface of single crystalline Si, is characterized by an abrupt change in C concentration of more than 1×10^{18} atoms/cc over a layer thickness in the range from about 6Å to about 60Å.

2. On page 8, the second full paragraph has been replaced by the following new paragraph:

It is a further object of the present invention to provide a method and apparatus for performing epitaxial single crystal deposition of silicon germanium carbon layers in a batch process. Such a single crystal silicon germanium carbon layer has sufficiently high C concentration, so that an interface defined by this single crystal silicon germanium carbon layer and an underlying substrate, which may contain an upper surface of single crystalline Si, is characterized by an abrupt change in C concentration of more than 1×10^{18} atoms/cc over a layer thickness in the range from about 6Å to about 60Å.

3. On page 8, the second last paragraph has been replaced by the following new paragraph:

It is a further object of the present invention to provide a method and apparatus for performing polycrystalline deposition of silicon carbon layers in a batch process. Such a polycrystalline silicon carbon layer has sufficiently high C concentration, so that an interface defined by this polycrystalline silicon carbon layer and an underlying

substrate, which may contain an upper surface of single crystalline Si, is characterized by an abrupt change in C concentration of more than 1×10^{18} atoms/cc over a layer thickness in the range from about 6Å to about 60Å.

4. On page 9, the second full paragraph has been replaced by the following new paragraph:

It is a further object of the present invention to provide a method and apparatus for performing deposition of polycrystalline silicon germanium carbon layers in a batch process. Such a polycrystalline silicon germanium carbon layer has sufficiently high C concentration, so that an interface defined by this polycrystalline silicon germanium carbon layer and an underlying substrate, which may contain an upper surface of single crystalline Si, is characterized by an abrupt change in C concentration of more than 1×10^{19} atoms/cc over a layer thickness in the range from about 6Å to about 60Å.

5. On pages 14 and 15, the paragraph bridging between pages 14 and 15 has been replaced by the following new paragraph:

First, a silicon germanium region or layer 22 is grown on surface 20 where the germanium concentration is about 15 atomic% shown by curve portion 22. Next, the germanium precursor is turned off and the ethylene is turned on at a flow of 3 sccm to form silicon carbon. Curve portion 24 shows the concentration of carbon at 2.42×10^{20} atoms/cm^{-3}. The corresponding layer or region 24' is shown in Fig. 2. The above sequence is repeated to form silicon germanium regions 26, 30, 34, 38, and 42 and carbon regions 28, 32, 36, 40, and 44. A silicon germanium surface cap 46 was formed over carbon region 44. Layers 24, 28, 32 and 36 were epitaxial while layers 40 and 44 had carbon concentrations high enough to form polycrystalline regions. Silicon germanium layers 42 and 46 which are grown on silicon carbon layers 40 and 44 also shows polycrystalline regions associated with layers 40 and 44. The peak carbon concentration levels in regions 24, 28, 32 and 36 increases linearly with a linear increase in carbon precursor flow rate. Carbon regions 24, 28, 32, 36, 40 and 44 were

grown at flow rates of ethylene of 3, 6, 9, 15, 25, and 35 sccm, respectively. Peak carbon concentrations of carbon regions 24, 28, 32, 36, 40 and 44 were 2.42×10^{20}, 4.97×10^{20}, 8.07×10^{20}, 1.46×10^{21}, 1.94×10^{21}, and 2.0×10^{21} atoms cm^{-3}, respectively. The carbon regions 24', 28', 32', 36', 40' and 44' and the respective adjacent silicon germanium regions 26', 30', 34', 38', and 42', as shown in Figure 2, define interfaces therebetween, which are characterized by an abrupt change in carbon concentration, for example, of more than 1×10^{18} atoms/cc over a thickness in the range from about 6Å to about 60Å. ~~Carbon~~ Further, carbon regions 24, 28, 32, 36, 40 and 44 each has an oxygen concentration which is less than 1×10^{17} atoms cm^{-3} according to SIMS, or below the background level of the SIMS detection system. The low level of oxygen contamination is due to the low initial base pressure in the deposition reactor and the choice of a precursor suitable for the heterogeneous growth process where the chemical reaction occurs on the growth surface. Ethylene as a precursor may be supplied from sources having other hydrocarbon mixtures such as ethane, methane, propane, butane, etc. Background ethylene levels as low as 450 PPM in hydrocarbon mixtures will function as a carbon precursor. In Fig. 2, prime reference numbers show layers corresponding to the curve portions with the same reference numbers in Fig. 1.